



September 14, 2005

Ms. Joyce Ackerman
On-Scene Coordinator
US EPA, Region VIII
999 18th Street, Suite 300
EPR-ER
Denver CO 80202-2466

Dear Ms. Ackerman:

The attached document is PacifiCorp's final report on the removal action performed under the Administrative Order on Consent (AOC), CERCLA docket number CERCLA-08-2004-0017. This report documents the actions to remove Libby Amphibole asbestos (LA) from PacifiCorp's 3rd West Substation, located at 147 South 400 West, Salt Lake City, Utah. The report has been prepared to meet the requirements of the AOC.

The report explains that LA does remain on site and will be managed in place under institutional controls. Those controls were designed using a format provided by the State of Utah Department of Environmental Quality. Because EPA expressed a desire to comment on the institutional controls, but has yet to do so, the controls have not been registered with the State of Utah or Salt Lake County. However, desiring to provide appropriate safeguards, PacifiCorp intends to fully implement the institutional controls beginning in November, 2005.

PacifiCorp has organized much of its extensive project record-keeping, including photographic records, into bound volumes. Any, or all, of these are available to EPA on request.

Please call or write if you have questions or would like to obtain additional records.

Sincerely,

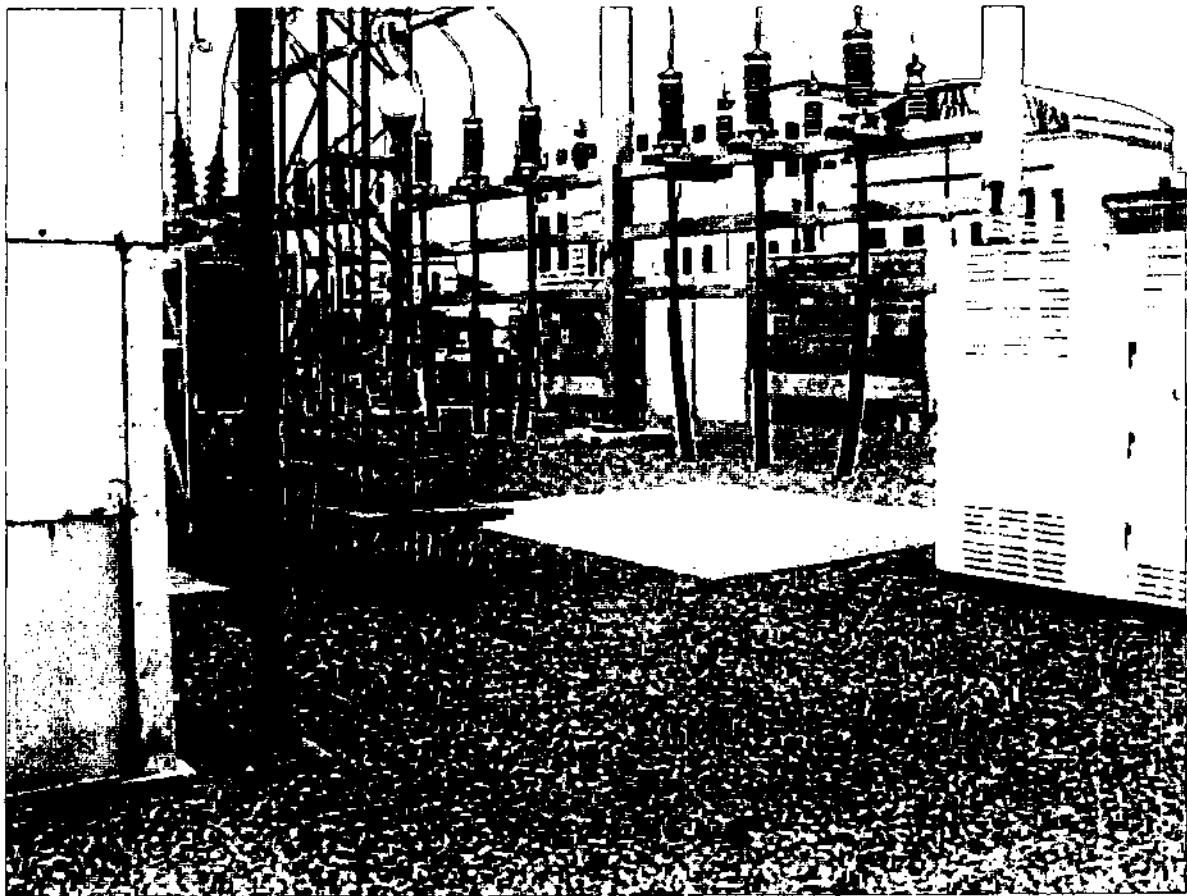
David Wilson, PE
PacifiCorp, Power Delivery

Cc: Craig Barnitz, Utah DEQ, w/attachment
Michael Jenkins, PacifiCorp, w/attachment

PacifiCorp Property

Libby Amphibole Asbestos Cleanup

FINAL REPORT



Utah Power 3rd West Substation
147 South 400 West
Salt Lake City, Utah

Final Removal Action Report

PacifiCorp 3rd West Substation

(Site of former Vermiculite Intermountain Processing Facility)

Purpose

This report was prepared to summarize the actions taken to comply with the Administrative Order on Consent for Removal Action (AOC) with an effective date of August 11, 004. This report documents the actions to remove Libby Amphibole asbestos (LA) from PacifiCorp's 3rd West Substation, located at 147 South 400 West, Salt Lake City, Utah. (See Appendix 1) This removal operation was part of a larger EPA Libby Sister Site project known as the Former Vermiculite Intermountain Facility – SLC2. The EPA-identified address for SLC2 is 100 South 333 West, Salt Lake City, Utah. (See Appendix 1)

The removal action was performed under the AOC, CERCLA docket number CERCLA-08-2004-0017. The contents and appendices of this report fulfill the reporting requirements of section VIII., paragraph 20 of the AOC.

Scope

Only actions related to complying with the AOC, including the removal of LA under the AOC and occurring on property located at 147 South 400 West, Salt Lake City, Utah and currently owned by PacifiCorp, are covered in this report.

Removal Options Considered and Adopted

Because the removal action took place on property on which an active electrical substation was in operation, options for removal were limited. Although EPA generally prefers removal actions regarding LA to be performed using wet methods, the existence and active operation of a 46,000 volt electric utility substation on the property required the consideration of other removal methods so as to avoid the potential for electrical contact created by a wet environment. Some removal was required inside the substation control house (termed "switch house" in documents prepared by EPA's contractor, CDM) and in areas of the substation yard containing energized electrical equipment. The substation serves an area of downtown Salt Lake City, so, as agreed by EPA, de-energizing the substation was not an option. Wet methods were not an option in electrically energized areas.

In accordance with EPA's directive, the only removal option considered in areas not containing energized electrical equipment was to remove the material wet. In un-energized areas of the control house, this meant using standard full-containment asbestos abatement techniques. In the areas of the substation yard, away from electrical equipment, this meant wetting the soil and keeping it wet through removal, loading into transport vehicles, transport and disposal.

For removal from energized areas in the control house, damp wiping and dry wiping were considered, but rejected as posing the potential for electrical shock to workers and/or damage to sensitive equipment. The removal method decided upon was to increase the number of negative air machines to maximize the air changes inside the isolated containment area then puff the LA off the energized parts using low pressure air while vacuuming the same parts with a HEPA-filtered vacuum equipped with a non-conducting brush. The negative air machines were also equipped with HEPA filters. This worked, as demonstrated by the ability to pass clearance on the first try.

Removal in the un-energized areas of the substation yard was accomplished using large and small earthmoving equipment. A large water tank was spotted on site, and pumps and 3-inch hose were used to spray the water on the areas being worked. The soil was kept wet enough to eliminate creation of airborne dust. LA-containing soils were removed with backhoes then transferred to the load-out area and loaded out via a front-end loader. The waste material was transported wet in plastic-lined trucks and trailers. When full, the plastic liner was folded over the top of the load then a cover tarp was pulled over all.

Areas with energized electrical equipment were cleaned using a large vacuum truck equipped with a HEPA filter. When necessary, dirt and gravel were loosened with hand tools then the LA-containing material was vacuumed into 20-yard sealed vacuum boxes. The vacuum boxes were transported to the landfill for emptying and disposal of the contents.

Disposal

All LA-containing waste generated from the removal action at PacifiCorp's 3rd West Substation was transported to Clean Harbors Environmental Services' Grassy Mountain Landfill, located off Interstate-80, 3 Miles East and 7 miles North of Knolls Grassy Mountain, UT 84029. The Grassy Mountain Landfill is a permitted TSCA/RCRA landfill. All LA-containing waste from PacifiCorp's 3rd West Substation was deposited wet in the TSCA cell and covered immediately.

Quantities and Types of Materials Removed

The material cleaned from the control house was dust that contained varying concentrations of LA fibers. Since cleaning methods were primarily vacuuming and wet wiping, plus some reliance on the negative air machines, the waste generated consisted of cloths used for wiping and vacuum and negative air machine filters. These materials were handled as if this were an AHERA asbestos abatement project and were bagged to be transferred to the landfill. Since the quantities were so small, it was not necessary to keep an accounting of the volumes of these wastes.

Some of the electric utility tools and equipment that had been located in the control house basement were no longer needed to be stored in that location by PacifiCorp. Most of these items were cleaned of LA dust prior to removing them

from the building. Other items were cheaper to dispose of than clean and keep, so those items were simply bagged and disposed of with the rags and filters.

The overall volume of waste from the control house removal action was extremely small compared to the rest of the site. Indeed, more than 99% of the waste, and 99% of the cost, for the removal action was related to removing yard gravel and soils that contained varying concentrations of LA. From the areas of the substation where no electrical equipment was located, a little over 15,000 cubic yards of rocky soil and concrete were removed.

An additional approximate 1,500 cubic yards of rock and soil was removed from the areas of the substation where electrical equipment was located. This was the material that was removed via the vacuum truck.

In these areas, 4 to 10 inches of insulating rock had to be removed from the surface before fine soils were encountered. Although LA was generally first encountered in the fine soils, since the gravel was removed using the vacuum truck, the gravel was disposed of with the rest of the material containing LA. This gravel is included in the 1,500 cubic yards mentioned above.

LA Material Remaining

There were some areas where soils containing LA could not be completely removed. These areas are:

- The bottom of the main pit
- Under a 46 kilovolt (kV) conduit and a 46 kV breaker
- In a constricted area between high voltage electrical equipment and a buried concrete wall and
- In 3 places at the property boundary.

Material containing LA was left in place in these areas with EPA concurrence. In each place where LA was left in place, compelling reasons exist for not removing it. Also in each area the material containing LA is many feet below the backfilled surface.

All known LA remaining on site has been mapped on a topographic map, with reference to a fixed point in the substation. The material will be managed in accordance with institutional controls filed with EPA, Utah DEQ, Salt Lake County, and numerous departments within PacifiCorp. A copy of the institutional controls documents is attached as Appendix 2.

Sampling and Analysis

EPA's contractors performed all of the pre-removal action sampling and analysis. Both air and bulk (dust and soil) samples were collected as EPA determined the extent of the area in which it would require clean-up. Results of these sampling events are presented in CDM's series of reports on the former Vermiculite Intermountain facility – SLC2, which already are available to EPA. They are not reproduced here.

During the removal action, both CDM and PacifiCorp's contractor, R&R Environmental, collected perimeter air samples to ensure activities associated with the removal action did not result in airborne LA migrating off site. Results of CDM's sampling are presented in the report mentioned in the paragraph above. Results of R&R's sampling are compiled in two books of sample results. Due to the volume of material, printouts of results have not been included with this report, but will be provided to EPA on request. As the results show, during the six months of excavation, a total of 178 days, from 5 sample locations each sample day, airborne LA was detected in only 16 samples. In all but 2 of these samples, only 1 LA structure was detected. In the other 2 samples, 2 structures were detected. Each time LA was detected in the perimeter monitors, the site was evaluated for possible improvement of dust control measures.

Both chrysotile and amosite were also detected in the perimeter air at various times. The sources of these fibers are unknown; however, a worker was observed sweeping the asbestos roofing on the neighboring building.

During most of the removal action, R&R also collected breathing zone air samples from the workers. Workers assigned to wear breathing zone monitors changed on a daily basis to ensure all job functions were routinely monitored. Generally 1 or 2 workers wore monitors each day. Although fibers were detected in the filters of the breathing zone monitors, counts remained below action levels.

Since the workers' breathing zone monitoring demonstrated such a low level of exposure, R&R Environmental performed a Negative Exposure Assessment in accordance with OSHA regulations. Following the Negative Exposure Assessment, personnel air monitoring was stopped after January 7, 2005.

EPA's contractor CDM collected all clearance samples, except under the control house, and submitted them for analysis to a laboratory under contract with the EPA. For clearance of the control house, AHERA aggressive air sampling techniques were used. The control house was divided into 2 zones, the main level and the basement, and 5 samples were collected from each zone. Clearance required that no LA fibers be detected in any of the samples. Both zones passed clearance on the first try. (CDM's clearance statement and tabulated results of analysis are included in Appendix 3.)

CDM cleared excavated areas in zones, as well. When PacifiCorp's contractors determined an area had been excavated to the point they thought it should pass clearance, CDM was called in to sample the area. The area was cordoned off and mapped. CDM collected 5-point composite samples from each sample area and submitted them to Reservoirs Environmental, Inc. for analysis. Clearance criteria was:

- No LA detected in the top foot of soil.
- Less than 1% when more than 1 foot had been excavated.

As shown on CDM's map (included in Appendix 4), 4 of the sampling zones cleared with no LA detected. The other 18 zones cleared with traces of LA detected. Less than 0.2% was considered a trace amount. (CDM's statement on soil clearance and tabulated sample results are also presented in Appendix 4.) Areas that could not be cleared were discussed in the LA Material Remaining section, above.

When the area beneath the control house was cleaned, it was a permit-required confined space. Access was through a 24-inch diameter hole cut in the concrete foundation wall. CDM personnel were not confined space trained, so PacifiCorp's consultant, R&R Environmental, collected the clearance samples, using a microvac technique employing air sampling pumps and filters, and submitted them to Reservoirs Environmental for analysis. Clearance criteria had not been pre-established for microvac samples, but when analysis showed one sample to have no detected LA and the other to have 1 fiber detected, EPA declared the crawlspace beneath the control house clear. The hole in the foundation wall has been patched, sealing up the crawl space.

At PacifiCorp's request, R&R Environmental also collected bulk samples of material containing LA from various locations throughout the substation property. Few of those samples were submitted for analysis, but all remain in storage at R&R's offices. One sample of the material surrounding the circa 1890 boiler pedestals was analyzed and found to contain 35% LA.

While excavating eastern edge of the property, a small pocket of hydrocarbon contamination was encountered. Sampling of the material was inconclusive; the exact material could not be identified, merely the degree of contamination. Since all of the excavated spoils were being deposited in a TSCA landfill, this material was co-disposed with the rest of the excavated spoils.

Costs

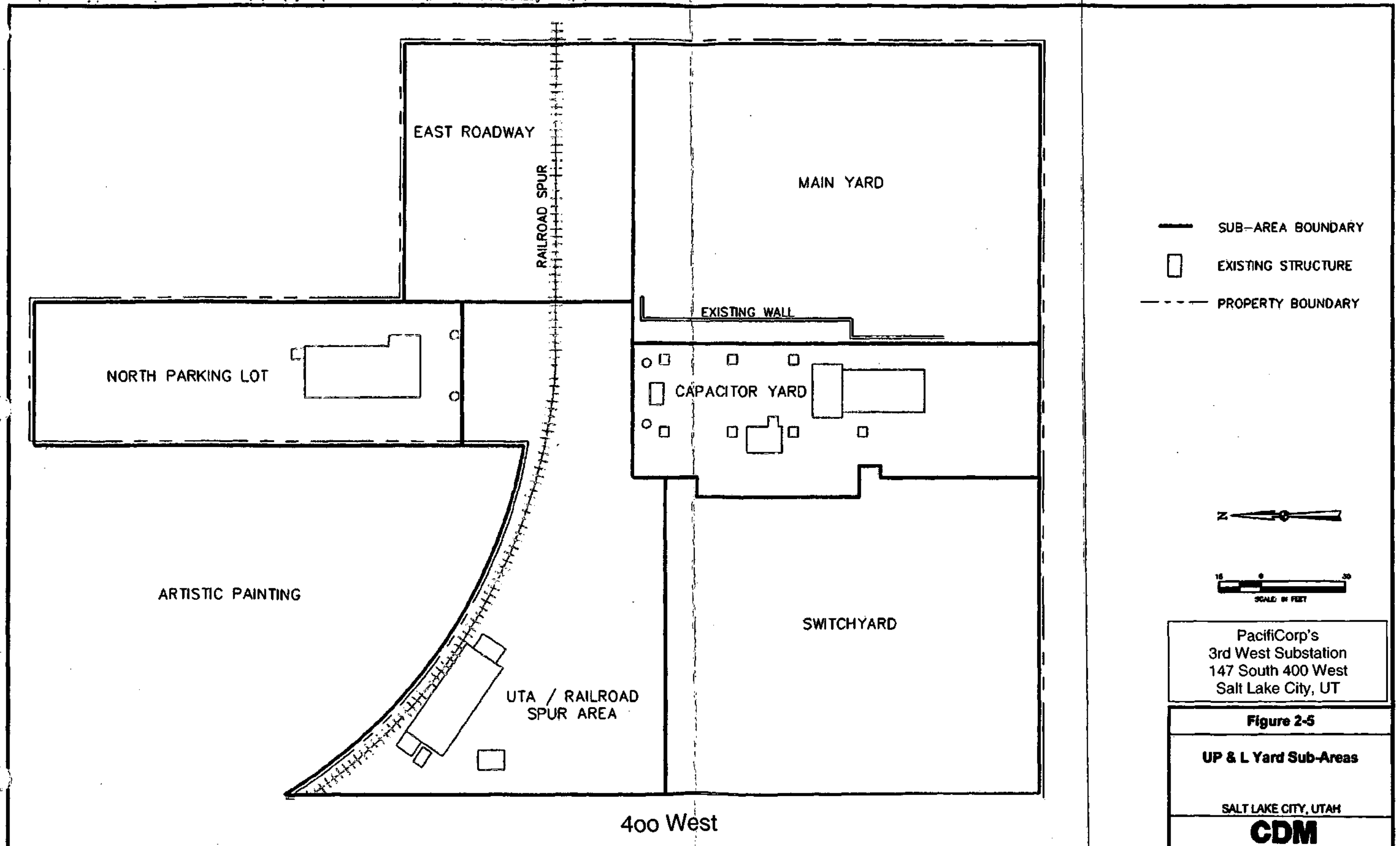
PacifiCorp incurred costs associated with the removal action ranging from the direct contractor costs for digging, hauling and disposal, to associated costs, such as rental of a staging area and an office trailer, and internal costs, such as wages and salaries. Total costs, as of August 17, 2005, minus wages and salaries for PacifiCorp employees and EPA oversight costs, are \$3.25 million. Including PacifiCorp wages and salaries, the costs are \$3.42 million. EPA oversight costs are unknown. A breakdown of costs to PacifiCorp, excluding wages and salaries, is included in Appendix 5. Due to volume considerations, copies of contracts and invoices have not been included, but will be made available to EPA on request.

Certification

Under penalty of law, I certify that to the best of my knowledge, after appropriate inquiries of all relevant persons involved in the preparation of the report, the information submitted is true, accurate and complete. I am aware that there are

significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Appendix 1



Color Map(s)

The following pages
contain color that does
not appear in the
scanned images.

To view the actual images, please
contact the Superfund Records
Center at (303) 312-6473.





Figure ES-1

Site Location Map

Former Vermiculite Intermountain Facility
Libby Sister Site SLC2
Salt Lake City, UT

Legend

-  Approximate Boundary of
Former Processing Building
-  SLC2 Site



0 250 500 1,000
Feet

CDM

Appendix 2

ENVIRONMENTAL NOTICE AND INSTITUTIONAL CONTROL

Consistent with the Utah Environmental Institutional Control Act (Utah Code Sections 19-10-101, et seq.), PacifiCorp ("Owner"), owner of the property located at 147 South 400 West, in Salt Lake City, Salt Lake County, State of Utah ("Property" herein; more particularly described on Attachment A which is attached hereto and by this reference made a part hereof) hereby makes and imposes upon the Property the following described Institutional Control, subject to the terms and conditions herein stated:

1. Notice is hereby given that certain areas of the Property as described below are, or may be, contaminated with a hazardous material and, therefore, institutional control(s) must be imposed to mitigate the risk to the public health, safety and/or the environment:

Subsurface soils on portions of the Property contain varying amounts of Libby Amphibole (LA) asbestos in excess of 1% ("affected soils"). LA contamination on the Property is the result of historic processing activities on and near the Property of vermiculite ore from the Zonolite Mine, located outside Libby, Montana. Following extensive cleanup of surface and subsurface soils on the Property, all remaining affected soils are subsurface soils which exist at various depths as depicted on the accompanying plat map.

The map uses orange striping to show areas of remaining affected soils. The map also includes topographic lines to show the depths of affected soils. These depths of LA-containing soils are depths below the reference point. The reference point is shown on the map as the "SET RIVET" and exists physically as a rivet set in a concrete wall. The reference elevation above sea level is also shown on the map.

Following excavation of surface and subsurface soils, the site was restored by replacing the excavated LA-containing soils with clean soil.

Additional information is available from the following PacifiCorp sources:

David Wilson
c/o PacifiCorp
825 NE Multnomah, Suite 1700 LCT

Portland OR 97232

2. Use of the Property also is restricted by the following additional Institutional Control(s) in the form of Engineering Controls:

The engineering controls are in the form of bright orange, plastic fencing laid as warning barriers on top of the LA-containing soils. This is intended to alert anyone who might excavate into soil containing LA. Varying depths of clean soil, as depicted on the accompanying plat map, cover the orange plastic and LA-containing soils.

Should anyone excavating soils from this property encounter orange, plastic fencing, the person must stop the excavation immediately and contact an On-Scene Coordinator from EPA Region VIII at 800-227-8917 and/or the Executive Director or a designate of the Utah Department of Environmental Quality at 801-536-4400. EPA and/or DEQ must be told that an excavation has encountered Libby Amphibole asbestos associated with Zonolite vermiculite processing and guidance is needed to proceed. EPA and/or the Utah DEQ will provide guidance on excavating below the orange, plastic warning barrier. Excavating below this barrier without EPA and/or Utah DEQ oversight is unlawful.

In three places along the perimeter of the property, orange, plastic warning barriers are installed in vertical configurations. These are shown on the plat map as orange lines at the property boundary. These vertical barriers are to indicate that the soil on the PacifiCorp side of the barriers is clean, and the soil on the neighboring property side of the barriers in these locations likely contains LA. Removing soils outside of the Property boundary near these barriers where LA-containing soils may exist must be done under EPA and/or Utah DEQ supervision, as well.

Copies of these institutional controls and accompanying plat map and property description are maintained in PacifiCorp's Property Department, Substation Engineering Department, and Substation Maintenance Department while PacifiCorp owns and/or occupies the property and will be passed to the new owner in the event the property is sold.

No Institutional Controls apply to the use of the Property except as described above.

3. The above described Institutional Control shall be operated and maintained in perpetuity as follows unless terminated or modified as provided in Utah Code Section 19-10-105:

The Institutional Controls do not require special operation and/or maintenance needs beyond their existence. Should soils below the orange, plastic warning barrier be excavated under EPA and/or Utah DEQ supervision, EPA and/or Utah DEQ will, at that time, determine how work shall proceed and whether new or additional institutional controls are necessary.

4. This Institutional Control runs with the land and is binding on all successors in interest of the Owner unless or until it is removed as provided in Utah Code Section 19-10-105.

5. The appropriate representative of the EPA and/or the Executive Director of the Utah Department of Environmental Quality, or her designate, shall have access to the Property at all reasonable times to verify that these Institutional Controls are being maintained and that the party or parties in possession of the Property are complying with the Institutional Controls.

6. This Institutional Control may be enforced and/or protected as provided in Utah Code Section 19-10-106.

7. Instruments which convey any interest in the Property (fee, leasehold, easement, etc.,) shall contain a notification to the person or entity which acquires the interest that the Property is subject to this Environmental Notice and Institutional Control and identify the specific place at which it is recorded.

8. This Institutional Control may only be terminated in accordance with the provisions of Utah Code Section 19-10-105 and with the prior written approval of the Executive Director of the Utah Department of Environmental Quality and EPA.

EXECUTED as of the ____ day of _____, 20__

[Owner]

1. _____, Executive Director of the Utah Department of Environmental Quality, or his/her designated representative, hereby

approves the foregoing Institutional Control pursuant to Utah Code
Section 19-10-103.

Executive Director,
Utah Department of Environmental
Quality

STATE OF UTAH)
) ss.
County of _____)

On the ____ day of _____, 20__, personally appeared before me
_____, the owner named in the foregoing instrument who duly
acknowledged to me that he executed the same.

Notary Public, residing at:

My Commission expires: _____

ATTACHMENT A

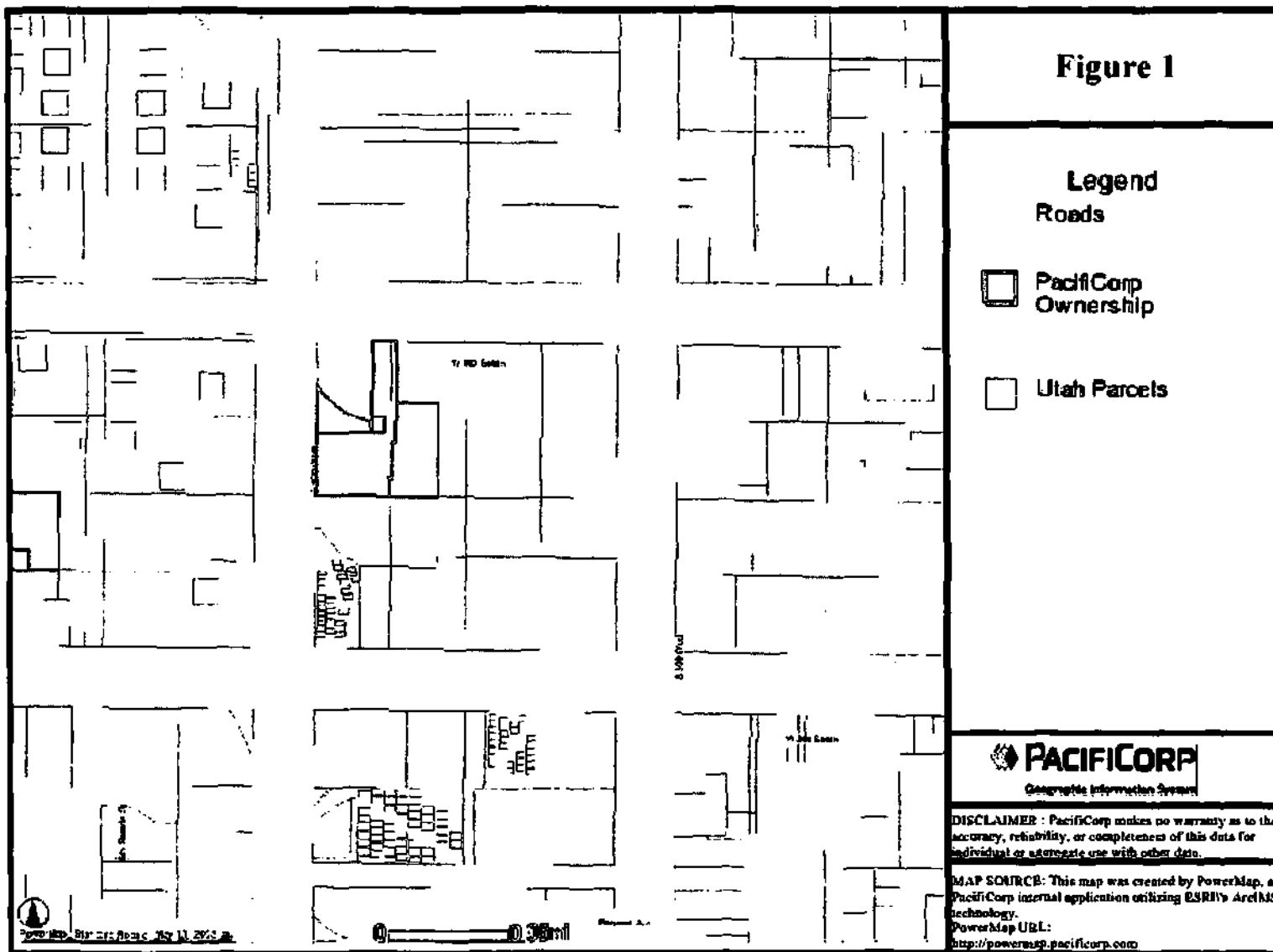
Description of Property

The property address is 147 South 400 West, Salt Lake City, Utah. It is located on the east side of 400 West Street, between 100 and 200 South Streets and is made up of Lots 5 and 6, Block 66, Plat A, Salt Lake City Survey. (Figure 1 shows the location of Block 66 in Salt Lake City and highlights the parcels within the block that are the subject of these institutional controls.

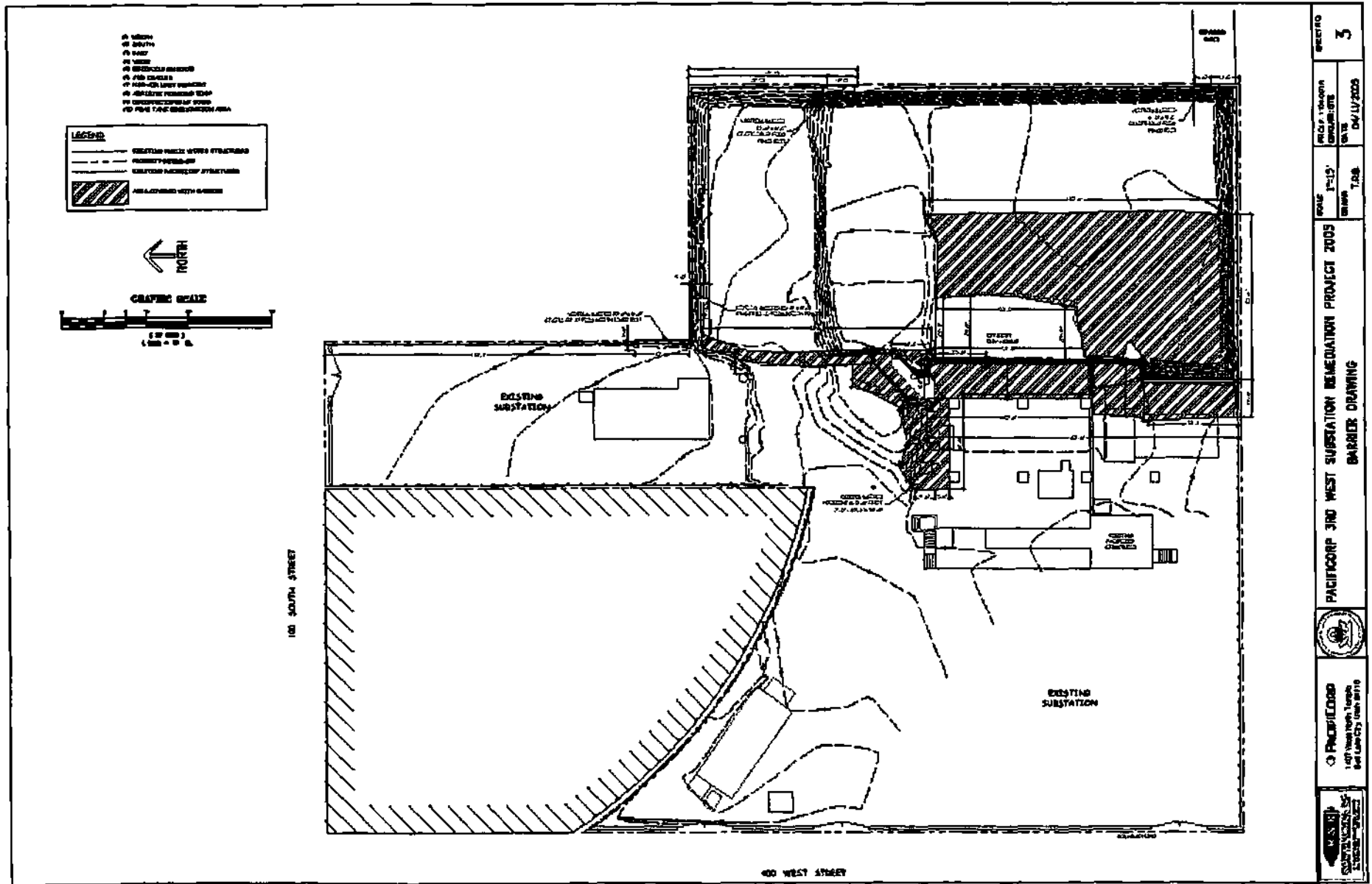
Approximately half of the property, the southwest portion and the narrow, central section extending northward, is occupied by PacifiCorp's energized 46 kilovolt electric utility substation. The triangular portion in the northwest part of the property is occupied by a Utah Transportation Authority (UTA) light rail substation. The UTA substation is separated from PacifiCorp's substation by a chain-link fence. The eastern portion of the property is vacant.

The entire property, except for a portion facing 400 West Street, is surrounded by a six-foot tall chain-link fence, topped with razor wire, and built to electric utility substation standards. All gates remain closed and locked at all hours. The portion on 400 West Street without chain-link fencing is secured by a 10-foot tall brick and concrete wall. Fence integrity and area security are checked monthly, at minimum. Identified problems are remedied immediately.

The base of the entire area is native regional soils, topped with fractured rock. No portion of the property is paved. There is one building on the property, located at the approximate center. The building has a basement that has been cleaned to LA-cleanup specifications and sealed. The three rooms on the main floor (which have also been cleaned to LA-cleanup specifications) house substation batteries, substation controls, and a non-functioning bathroom.



Plat Map



Appendix 3

3.2.1.3 Utah Power and Light Switch House

Perimeter Stationary Air Samples

A total of 11 perimeter air samples were collected during interior cleaning activities at the UP&L Switch House. All 11 perimeter air samples were collected adjacent to containment walls or NAFU units (Figure 3-4).

Basement - During interior cleaning activities in the basement, perimeter air samples were collected near the entrance of the north containment, near NAFU 1 on the west side of the building, near NAFU 2 on the west side of the building, and between NAFU 1 and 2 on the west side of the building (Figure 3-4). All samples were nondetect for LA asbestos (Table 3-1).

DOT Volpe Center
CDM

3-3

C:\06034\107\35101 345033 - SLIC2 Removal\Removal Summary Report\Drawings\1\SLIC2_removal_report_rev1.doc

Section 3
Sample Analysis and Results

Main Level - During interior cleaning activities on the main level, perimeter air samples were collected near containment at the entrance to the control room on the north side of the building and near NAFU 3 on the south side of the building (Figure 3-4). All samples were nondetect for LA asbestos (Table 3-1).

Clearance Air Samples

Five clearance samples were collected from each containment area for a total of 10 samples. All 10 samples were nondetect for LA asbestos.

LIBBY
TEM Asbestos Structure Count - AHERA

Version 27

SAMPLE ID

Status Analyzed
 EPA Sample Number SLR2-00486
 QA Sample Type Not QA
 Lab Sample Number 108364-908856
 Sample Type Air
 Category Field
 Prep Direct
 Counting rules AHERA

PARAMETERS

Number of Grid Openings (amphibole) 6
 Number of Grid Openings (chrysotile) 6
 Area of grid opening (mm2) 0.011
 F Factor 1.00E+00
 Effective primary filter area (mm2) 385.0
 Effective secondary filter area (mm2) 201.0
 Volume (L) or Sample Area (cm2) 1336
 Area counted (mm2) for LA/OA 0.066
 Area counted (mm2) for C 0.066

TOTAL COUNTS

Total Structures	0
Total Asbestos structures	0
Total NAM	0
Total AHERA structures	0
Total Non-AHERA asbestos structures	0

COUNTS (based on countable AHERA structures only)

	LA	OA	C	Total
AHERA Structures (< 5 um)	0	0	0	0
AHERA Structures (>= 5 um)	0	0	0	0

AIR CONCENTRATION (s/cc)

	LA	OA	C	Total
Loading on primary filter (s/mm2)	<1.5E+01	<1.5E+01	<1.5E+01	<1.5E+01
Air Conc (s/cc)	<4.4E-03	<4.4E-03	<4.4E-03	<4.4E-03

(If Total = ND, DL is based on LA)

(If Total = ND, DL is based on LA)

DETECTION LIMITS

	LA/OA	C
Loading on primary filter (s/mm2)	1.5E+01	1.5E+01
Sensitivity (s/cc)	4.4E-03	4.4E-03

LIBBY

TEM Asbestos Structure Count - AHERA

Version 27

SAMPLE ID

Status Analyzed
 EPA Sample Number SLR2-00467
 QA Sample Type Not QA
 Lab Sample Number 108384-908857
 Sample Type Air
 Category Field
 Prep Direct
 Counting rules AHERA

PARAMETERS

Number of Grid Openings (amphibole) 6
 Number of Grid Openings (chrysotile) 6
 Area of grid opening (mm²) 0.011
 F Factor 1.00E+00
 Effective primary filter area (mm²) 385.0
 Effective secondary filter area (mm²) 201.0
 Volume (L) or Sample Area (cm²) 1336
 Area counted (mm²) for LA/OA 0.066
 Area counted (mm²) for C 0.066

TOTAL COUNTS

Total Structures	0
Total Asbestos structures	0
Total NAM	0
Total AHERA structures	0
Total Non-AHERA asbestos structures	0

COUNTS (based on countable AHERA structures only)

	LA	OA	C	Total
AHERA Structures (< 5 um)	0	0	0	0
AHERA Structures (>= 5 um)	0	0	0	0

AIR CONCENTRATION (s/cc)

	LA	OA	C	Total
Loading on primary filter (s/mm ²)	<1.5E+01	<1.5E+01	<1.5E+01	<1.5E+01
Air Conc (s/cc)	<4.4E-03	<4.4E-03	<4.4E-03	<4.4E-03

(If Total = ND, DL is based on LA)

(If Total = ND, DL is based on LA)

DETECTION LIMITS

	LA/OA	C
Loading on primary filter (s/mm ²)	1.5E+01	1.5E+01
Sensitivity (s/cc)	4.4E-03	4.4E-03

LIBBY

Version 27

TEM Asbestos Structure Count -- AHERA

SAMPLE ID

Status Analyzed
 EPA Sample Number SLR2-00468
 QA Sample Type Not QA
 Lab Sample Number 108384-908858
 Sample Type Air
 Category Field
 Prep Direct
 Counting rules AHERA

PARAMETERS

Number of Grid Openings (amphibole) 6
 Number of Grid Openings (chrysotile) 6
 Area of grid opening (mm2) 0.011
 F Factor 1.00E+00
 Effective primary filter area (mm2) 385.0
 Effective secondary filter area (mm2) 201.0
 Volume (L) or Sample Area (cm2) 1336
 Area counted (mm2) for LA/OA 0.066
 Area counted (mm2) for C 0.066

TOTAL COUNTS

Total Structures	0
Total Asbestos structures	0
Total NAM	0
Total AHERA structures	0
Total Non-AHERA asbestos structures	0

COUNTS (based on countable AHERA structures only)

	LA	OA	C	Total
AHERA Structures (< 5 um)	0	0	0	0
AHERA Structures (>= 5 um)	0	0	0	0

AIR CONCENTRATION (s/cc)

	LA	OA	C	Total
Loading on primary filter (s/mm2)	<1.5E+01	<1.5E+01	<1.5E+01	<1.5E+01
Air Conc (s/cc)	<4.4E-03	<4.4E-03	<4.4E-03	<4.4E-03

(If Total = ND, DL is based on LA)

(If Total = ND, DL is based on LA)

DETECTION LIMITS

	LA/OA	C
Loading on primary filter (s/mm2)	1.5E+01	1.5E+01
Sensitivity (s/cc)	4.4E-03	4.4E-03

LIBBY

Version 27

TEM Asbestos Structure Count - AHERA

SAMPLE ID

Status Analyzed
 EPA Sample Number SLR2-00469
 QA Sample Type Not QA
 Lab Sample Number 108384-908859
 Sample Type Air
 Category Field
 Prep Direct
 Counting rules AHERA

PARAMETERS

Number of Grid Openings (amphibole) 6
 Number of Grid Openings (chrysotile) 6
 Area of grid opening (mm²) 0.011
 F Factor 1.00E+00
 Effective primary filter area (mm²) 385.0
 Effective secondary filter area (mm²) 201.0
 Volume (L) or Sample Area (cm²) 1336
 Area counted (mm²) for LA/OA 0.066
 Area counted (mm²) for C 0.066

TOTAL COUNTS

Total Structures	0
Total Asbestos structures	0
Total NAM	0
Total AHERA structures	0
Total Non-AHERA asbestos structures	0

COUNTS (based on countable AHERA structures only)

	LA	OA	C	Total
AHERA Structures (< 5 μ m)	0	0	0	0
AHERA Structures (\geq 5 μ m)	0	0	0	0

AIR CONCENTRATION (s/cc)

	LA	OA	C	Total
Loading on primary filter (s/mm ²)	<1.5E+01	<1.5E+01	<1.5E+01	<1.5E+01
Air Conc (s/cc)	<4.4E-03	<4.4E-03	<4.4E-03	<4.4E-03

(If Total = ND, DL is based on LA)

(If Total = ND, DL is based on LA)

DETECTION LIMITS

	LA/OA	C
Loading on primary filter (s/mm ²)	1.5E+01	1.5E+01
Sensitivity (s/cc)	4.4E-03	4.4E-03

LIBBY

TEM Asbestos Structure Count - AHERA

Version 27

SAMPLE ID

Status Analyzed
 EPA Sample Number SLR2-00470
 QA Sample Type Not QA
 Lab Sample Number 108384-908860
 Sample Type Air
 Category Field
 Prep Direct
 Counting rules AHERA

PARAMETERS

Number of Grid Openings (amphibole) 6
 Number of Grid Openings (chrysotile) 6
 Area of grid opening (mm²) 0.011
 F Factor 1.00E+00
 Effective primary filter area (mm²) 385.0
 Effective secondary filter area (mm²) 201.0
 Volume (L) or Sample Area (cm²) 1336
 Area counted (mm²) for LA/OA 0.066
 Area counted (mm²) for C 0.066

TOTAL COUNTS

Total Structures	0
Total Asbestos structures	0
Total NAM	0
Total AHERA structures	0
Total Non-AHERA asbestos structures	0

COUNTS (based on countable AHERA structures only)

	LA	OA	C	Total
AHERA Structures (< 5 um)	0	0	0	0
AHERA Structures (>= 5 um)	0	0	0	0

AIR CONCENTRATION (s/cc)

	LA	OA	C	Total
Loading on primary filter (s/mm ²)	<1.5E+01	<1.5E+01	<1.5E+01	<1.5E+01
Air Conc (s/cc)	<4.4E-03	<4.4E-03	<4.4E-03	<4.4E-03

(If Total = ND, DL is based on LA)

(If Total = ND, DL is based on LA)

DETECTION LIMITS

	LA/OA	C
Loading on primary filter (s/mm ²)	1.5E+01	1.5E+01
Sensitivity (s/cc)	4.4E-03	4.4E-03

LIBBY

Version 27

TEM Asbestos Structure Count -- AHERA

SAMPLE ID

Status Analyzed
 EPA Sample Number SLR2-00475
 QA Sample Type Not QA
 Lab Sample Number 108466-909335
 Sample Type Air
 Category Field
 Prep Direct
 Counting rules AHERA

PARAMETERS

Number of Grid Openings (amphibole) 7
 Number of Grid Openings (chrysotile) 7
 Area of grid opening (mm2) 0.011
 F Factor 1.00E+00
 Effective primary filter area (mm2) 385.0
 Effective secondary filter area (mm2) 201.0
 Volume (L) or Sample Area (cm2) 1356
 Area counted (mm2) for LA/OA 0.077
 Area counted (mm2) for C 0.077

TOTAL COUNTS

Total Structures	0
Total Asbestos structures	0
Total NAM	0
Total AHERA structures	0
Total Non-AHERA asbestos structures	0

COUNTS (based on countable AHERA structures only)

	LA	OA	C	Total
AHERA Structures (< 5 μ m)	0	0	0	0
AHERA Structures (>= 5 μ m)	0	0	0	0

AIR CONCENTRATION (s/cc)

	LA	OA	C	Total	
Loading on primary filter (s/mm2)	<1.3E+01	<1.3E+01	<1.3E+01	<1.3E+01	(If Total = ND, DL is based on LA)
Air Conc (s/cc)	<3.7E-03	<3.7E-03	<3.7E-03	<3.7E-03	(If Total = ND, DL is based on LA)

DETECTION LIMITS

	LA/OA	C
Loading on primary filter (s/mm2)	1.3E+01	1.3E+01
Sensitivity (s/cc)	3.7E-03	3.7E-03

LIBBY

Version 27

TEM Asbestos Structure Count -- AHERA

SAMPLE ID

Status Analyzed
 EPA Sample Number SLR2-00476
 QA Sample Type Not QA
 Lab Sample Number 108466-909336
 Sample Type Air
 Category Field
 Prep Direct
 Counting rules AHERA

PARAMETERS

Number of Grid Openings (amphibole) 7
 Number of Grid Openings (chrysotile) 7
 Area of grid opening (mm2) 0.011
 F Factor 1.00E+00
 Effective primary filter area (mm2) 385.0
 Effective secondary filter area (mm2) 201.0
 Volume (L) or Sample Area (cm2) 1356
 Area counted (mm2) for LA/OA 0.077
 Area counted (mm2) for C 0.077

TOTAL COUNTS

Total Structures	0
Total Asbestos structures	0
Total NAM	0
Total AHERA structures	0
Total Non-AHERA asbestos structures	0

COUNTS (based on countable AHERA structures only)

	LA	OA	C	Total
AHERA Structures (< 5 um)	0	0	0	0
AHERA Structures (>= 5 um)	0	0	0	0

AIR CONCENTRATION (s/cc)

	LA	OA	C	Total	
Loading on primary filter (s/mm2)	<1.3E+01	<1.3E+01	<1.3E+01	<1.3E+01	(If Total = ND, DL is based on LA)
Air Conc (s/cc)	<3.7E-03	<3.7E-03	<3.7E-03	<3.7E-03	(If Total = ND, DL is based on LA)

DETECTION LIMITS

	LA/OA	C
Loading on primary filter (s/mm2)	1.3E+01	1.3E+01
Sensitivity (s/cc)	3.7E-03	3.7E-03

LIBBY

Version 27

TEM Asbestos Structure Count -- AHERA

SAMPLE ID

Status	Analyzed
EPA Sample Number	SLR2-00477
QA Sample Type	Not QA
Lab Sample Number	108466-909337
Sample Type	Air
Category	Field
Prep	Direct
Counting rules	AHERA

PARAMETERS

Number of Grid Openings (amphibole)	7
Number of Grid Openings (chrysotile)	7
Area of grid opening (mm ²)	0.011
F Factor	1.00E+00
Effective primary filter area (mm ²)	385.0
Effective secondary filter area (mm ²)	201.0
Volume (L) or Sample Area (cm ²)	1356
Area counted (mm ²) for LA/OA	0.077
Area counted (mm ²) for C	0.077

TOTAL COUNTS

Total Structures	0
Total Asbestos structures	0
Total NAM	0
Total AHERA structures	0
Total Non-AHERA asbestos structures	0

COUNTS (based on countable AHERA structures only)

	LA	OA	C	Total
AHERA Structures (< 5 μ m)	0	0	0	0
AHERA Structures (\geq 5 μ m)	0	0	0	0

AIR CONCENTRATION (s/cc)

	LA	OA	C	Total	
Loading on primary filter (s/mm ²)	<1.3E+01	<1.3E+01	<1.3E+01	<1.3E+01	(If Total = ND, DL is based on LA)
Air Conc (s/cc)	<3.7E-03	<3.7E-03	<3.7E-03	<3.7E-03	(If Total = ND, DL is based on LA)

DETECTION LIMITS

	LA/OA	C
Loading on primary filter (s/mm ²)	1.3E+01	1.3E+01
Sensitivity (s/cc)	3.7E-03	3.7E-03

LIBBY

Version 27

TEM Asbestos Structure Count -- AHERA**SAMPLE ID**

Status Analyzed
 EPA Sample Number SLR2-00478
 QA Sample Type Not QA
 Lab Sample Number 108466-909338
 Sample Type Air
 Category Field
 Prep Direct
 Counting rules AHERA

PARAMETERS

Number of Grid Openings (amphibole) 7
 Number of Grid Openings (chrysotile) 7
 Area of grid opening (mm2) 0.011
 F Factor 1.00E+00
 Effective primary filter area (mm2) 385.0
 Effective secondary filter area (mm2) 201.0
 Volume (L) or Sample Area (cm2) 1356
 Area counted (mm2) for LA/OA 0.077
 Area counted (mm2) for C 0.077

TOTAL COUNTS

Total Structures	0
Total Asbestos structures	0
Total NAM	0
Total AHERA structures	0
Total Non-AHERA asbestos structures	0

COUNTS (based on countable AHERA structures only)

	LA	OA	C	Total
AHERA Structures (< 5 um)	0	0	0	0
AHERA Structures (>= 5 um)	0	0	0	0

AIR CONCENTRATION (s/cc)

	LA	OA	C	Total	
Loading on primary filter (s/mm2)	<1.3E+01	<1.3E+01	<1.3E+01	<1.3E+01	(If Total = ND, DL is based on LA)
Air Conc (s/cc)	<3.7E-03	<3.7E-03	<3.7E-03	<3.7E-03	(If Total = ND, DL is based on LA)

DETECTION LIMITS

	LA/OA	C
Loading on primary filter (s/mm2)	1.3E+01	1.3E+01
Sensitivity (s/cc)	3.7E-03	3.7E-03

LIBBY

Version 27

TEM Asbestos Structure Count – AHERA

SAMPLE ID

Status	Analyzed
EPA Sample Number	SLR2-00479
QA Sample Type	Not QA
Lab Sample Number	108466-909339
Sample Type	Air
Category	Field
Prep	Direct
Counting rules	AHERA

PARAMETERS

Number of Grid Openings (amphibole)	7
Number of Grid Openings (chrysotile)	7
Area of grid opening (mm ²)	0.011
F Factor	1.00E+00
Effective primary filter area (mm ²)	385.0
Effective secondary filter area (mm ²)	201.0
Volume (L) or Sample Area (cm ²)	1356
Area counted (mm ²) for LA/OA	0.077
Area counted (mm ²) for C	0.077

TOTAL COUNTS

Total Structures	0
Total Asbestos structures	0
Total NAM	0
Total AHERA structures	0
Total Non-AHERA asbestos structures	0

COUNTS (based on countable AHERA structures only)

	LA	OA	C	Total
AHERA Structures (< 5 µm)	0	0	0	0
AHERA Structures (>= 5 µm)	0	0	0	0

AIR CONCENTRATION (s/cc)

	LA	OA	C	Total
Loading on primary filter (s/mm ²)	<1.3E+01	<1.3E+01	<1.3E+01	<1.3E+01
Air Conc (s/cc)	<3.7E-03	<3.7E-03	<3.7E-03	<3.7E-03

(If Total = ND, DL is based on LA)

(If Total = ND, DL is based on LA)

DETECTION LIMITS

	LA/OA	C
Loading on primary filter (s/mm ²)	1.3E+01	1.3E+01
Sensitivity (s/cc)	3.7E-03	3.7E-03

Appendix 4

3.1.4 Utah Power and Light Yard Samples

A total of 23 confirmation samples were collected at the UP&L yard. Soil samples were collected after CDM personnel performed a visual inspection of the area cleaned. If no visible vermiculite was observed, a 5-point confirmation soil sample was collected within the cleaned area. All samples were analyzed by PLM. The action level for confirmation samples is trace < 0.2 % LA asbestos by PLM. If excavation exceeds 12 inches, the action level is <1 % LA asbestos. The corrective action for any sample exceeding the action level is to excavate an additional 6 inches and recollect confirmation samples as necessary. Of the 23 confirmation samples collected, 4 were nondetect for LA asbestos and remainder had trace (<1%) amounts of LA asbestos at depths exceeding 12 inches. Since the various depths to which the yard areas were excavated all exceeded 12 inches, there was no corrective action required.

3.1.4.1 Petroleum-Stained Soil Samples

During excavation activities, vermiculite-containing petroleum-stained soils were encountered along the east perimeter of the site. A toxic characteristic leaching procedure (TCLP) sample was collected by R&R Environmental from petroleum-stained soils that had a strong organic order associated with it. Analytical results for the soil samples indicated that the material could be disposed of with the other LA asbestos contaminated soils. This was in accordance with the waste stream specifications at Clean Harbors Grassy Mountain Facility regulated by the State of Utah. The results of these samples will be addressed in depth in subsequent R&R Environmental reports.

3.2 Air Samples

Two types of air samples were collected during interior cleaning activities (stationary and personal air). These air samples are discussed in the following subsections. All air samples were collected in accordance with the Final Draft RAWP (CDM 2003b).

3.2.1 Stationary Air Samples

Two kinds of stationary air samples were collected in conjunction with the interior cleaning activities. These included perimeter stationary air samples collected to discern if asbestos is migrating outside the exclusion zones, and clearance air samples to ensure that the air meets clearance criteria as determined by EPA and before personnel enter the area without PPE and returned building control to the owner. All stationary air samples were analyzed for LA asbestos content by TEM using AHERA counting methods (AHERA 2002).

3.2.1.1 Artistic Printing

Perimeter Stationary Air Samples

A total of 167 perimeter air samples were collected during interior cleaning activities at the Artistic Printing building. Of the 167 samples, six were collected in the clean-rooms of the decontamination trailers. These six samples were nondetect for LA asbestos. The remaining 161 perimeter air samples were collected adjacent to containment walls or negative air filtration units (NAFU) for each of the containment

Table 3-1 Summary of SLC2 Sample Results

Index ID Number	Date Collected	Location	Sample Matrix	Volume (L) or Area (cm ²)	Air Sample f/cc	Air Sample LA f/cc	Soil Samples % LA	Dust Samples LA s/cm ²
					PCM	TEM/AHERA	PLM - VE	TEM/AHERA
SLR2-00448	6/22/2004	Frank Edwards	Clearance	1336	--	<0.0044	--	--
SLR2-00449	6/22/2004	Frank Edwards	Clearance	1336	--	<0.0044	--	--
SLR2-00450	6/22/2004	Frank Edwards	Clearance	1336	--	<0.0044	--	--
SLR2-00451	6/22/2004	Frank Edwards	Clearance	1336	--	<0.0044	--	--
SLR2-00452	6/22/2004	Frank Edwards	Field Blank	0	--	--	--	<91
SLR2-00453	8/11/2004	UPL Switch House	Perimeter Air	1306	--	<0.0038	--	--
SLR2-00454	8/11/2004	UPL Switch House	Perimeter Air	1345	--	<0.0037	--	--
SLR2-00455	8/11/2004	UPL Switch House	Perimeter Air	1308	--	<0.0038	--	--
SLR2-00456	8/11/2004	UPL Switch House	Field Blank	0	--	--	--	<91
SLR2-00457	8/12/2004	UPL Switch House	Perimeter Air	1543	--	<0.0038	--	--
SLR2-00458	8/12/2004	UPL Switch House	Perimeter Air	1534	--	<0.0038	--	--
SLR2-00459	8/12/2004	UPL Switch House	Field Blank	0	--	--	--	<91
SLR2-00460	8/13/2004	UPL Switch House	Perimeter Air	1589	--	<0.0037	--	--
SLR2-00461	8/13/2004	UPL Switch House	Perimeter Air	1563	--	<0.0037	--	--
SLR2-00462	8/13/2004	UPL Switch House	Field Blank	0	--	--	--	<91
SLR2-00463	8/16/2004	UPL Switch House	Perimeter Air	1503	--	<0.0033	--	--
SLR2-00464	8/16/2004	UPL Switch House	Perimeter Air	1492	--	<0.0034	--	--
SLR2-00465	8/16/2004	UPL Switch House	Field Blank	0	--	--	--	<91
SLR2-00466	8/17/2004	UPL Switch House	Clearance	1336	--	<0.0044	--	--
SLR2-00467	8/17/2004	UPL Switch House	Clearance	1336	--	<0.0044	--	--
SLR2-00468	8/17/2004	UPL Switch House	Clearance	1336	--	<0.0044	--	--
SLR2-00469	8/17/2004	UPL Switch House	Clearance	1336	--	<0.0044	--	--
SLR2-00470	8/17/2004	UPL Switch House	Clearance	1336	--	<0.0044	--	--
SLR2-00471	8/17/2004	UPL Switch House	Field Blank	0	--	--	--	<150
SLR2-00472	8/18/2004	UPL Switch House	Perimeter Air	1488	--	<0.0039	--	--
SLR2-00473	8/18/2004	UPL Switch House	Perimeter Air	1469	--	<0.0040	--	--
SLR2-00474	8/18/2004	UPL Switch House	Field Blank	0	--	--	--	<91
SLR2-00475	8/19/2004	UPL Switch House	Clearance	1356	--	<0.0037	--	--
SLR2-00476	8/19/2004	UPL Switch House	Clearance	1358	--	<0.0037	--	--
SLR2-00477	8/19/2004	UPL Switch House	Clearance	1356	--	<0.0037	--	--
SLR2-00478	8/19/2004	UPL Switch House	Clearance	1358	--	<0.0037	--	--
SLR2-00479	8/19/2004	UPL Switch House	Clearance	1356	--	<0.0037	--	--
SLR2-00480	8/19/2004	UPL Switch House	Field Blank	0	--	--	--	<100
SLR2-00481	9/10/2004	UPL Yard	Clearance	--	--	--	TR	--
SLR2-00482	9/10/2004	UPL Yard (P3)	Perimeter Air	1096	--	<0.0049	--	--
SLR2-00483	9/10/2004	UPL Yard	Field Blank	0	--	--	--	<91
SLR2-00484								
SLR2-00485	9/16/2004	UPL Yard (P1)	Perimeter Air	1737	--	<0.0034	--	--
SLR2-00486	9/16/2004	UPL Yard	Field Blank	0	--	--	--	<91
SLR2-00487	9/17/2004	UPL Yard	Clearance	--	--	--	TR	--
SLR2-00488								
SLR2-00489								
SLR2-00490	9/24/2004	UPL Yard (P3)	Perimeter Air	1163	--	0.0042	--	--
SLR2-00491	9/24/2004	UPL Yard	Field Blank	0	--	--	--	<91
SLR2-00492	10/1/2004	UPL Yard (P6)	Stationary Air	1091	--	0.0064	--	--
SLR2-00493	10/1/2004	UPL Yard	Field Blank	0	--	--	--	<91
SLR2-00494	10/6/2004	UPL Yard	Clearance	--	--	--	TR	--
SLR2-00495	10/7/2004	UPL Yard (P3)	Perimeter Air	1208	--	<0.0041	--	--
SLR2-00496	10/7/2004	UPL Yard	Field Blank	0	--	--	--	<91
SLR2-00497	10/11/2004	UPL Yard	Clearance	--	--	--	TR	--
SLR2-00498	10/15/2004	UPL Yard (P1)	Perimeter Air	481	--	<0.0073	--	--
SLR2-00499	10/15/2004	UPL Yard	Field Blank	0	--	--	--	<91
SLR2-00500	10/22/2004	UPL Yard (P4)	Perimeter Air	606	--	<0.0058	--	--
SLR2-00501	10/22/2004	UPL Yard	Field Blank	0	--	--	--	<91
SLR2-00502	10/27/2004	UPL Yard	Clearance	--	--	--	TR	--
SLR2-00503	10/29/2004	UPL Yard (P3)	Perimeter Air	1012	--	<0.0038	--	--
SLR2-00504	10/29/2004	UPL Yard	Field Blank	0	--	--	--	<91
SLR2-00505	11/5/2004	UPL Yard (P1)	Perimeter Air	1309	--	0.0038	--	--
SLR2-00506	11/9/2004	UPL Yard	Clearance	--	--	--	TR	--
SLR2-00507								
SLR2-00508								
SLR2-00509	11/11/2004	UPL Yard	Clearance	--	--	--	TR	--
SLR2-00510	11/11/2004	UPL Yard	Clearance	--	--	--	TR	--

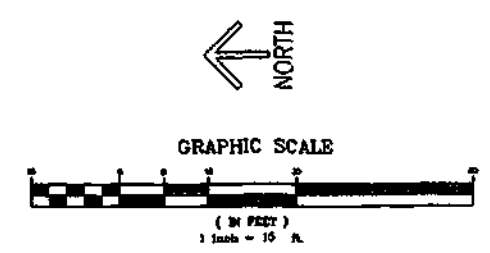
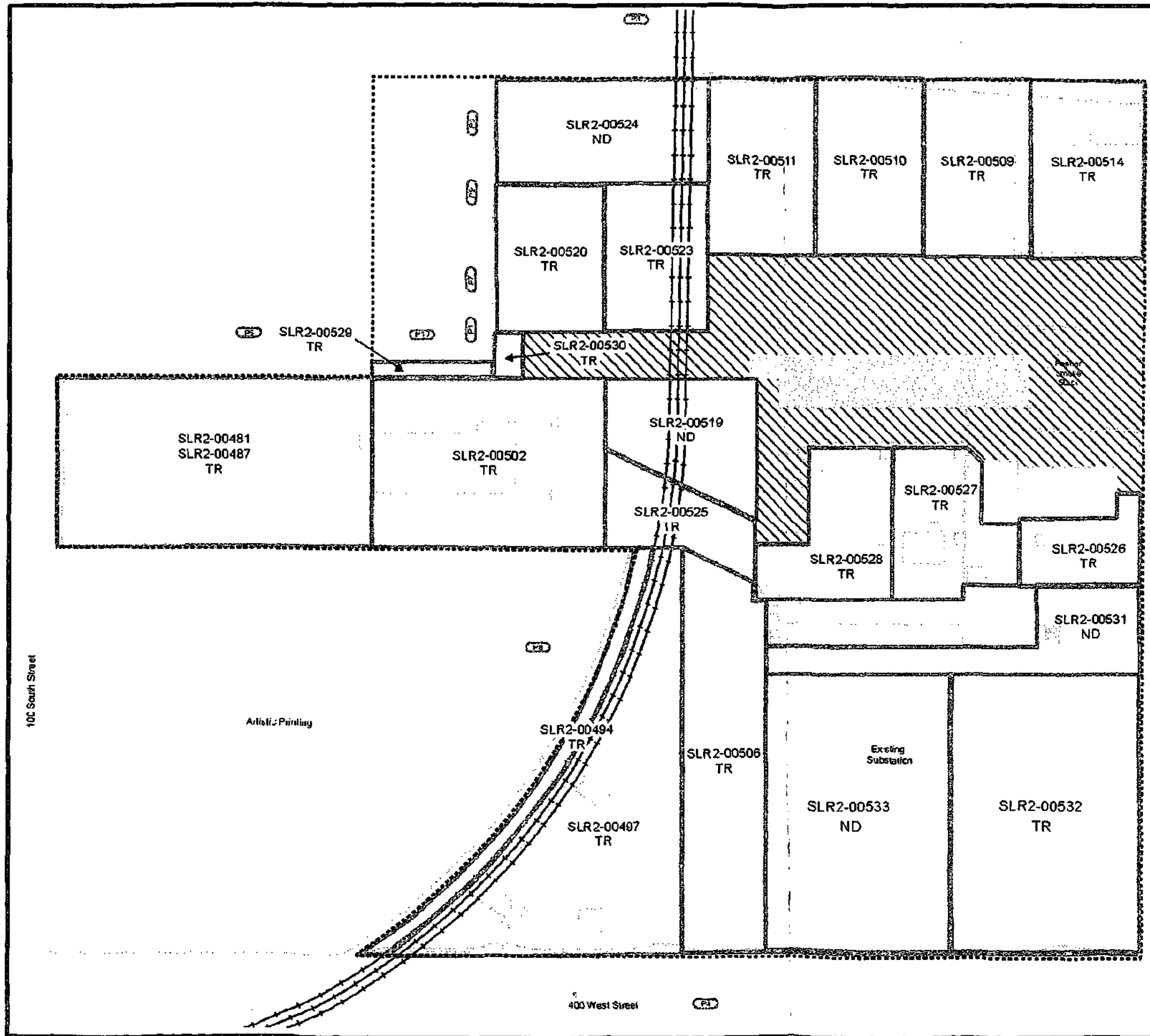
Table 3-1 Summary of SLC2 Sample Results

Index ID Number	Date Collected	Location	Sample Matrix	Volume (L) or Area (cm ²)	Air Sample f/cc	Air Sample LA f/cc	Soil Samples % LA	Dust Samples LA s/cm ²
					PCM	TEM/AHERA	PLM - VE	TEM/AHERA
SLR2-00511	11/11/2004	UPL Yard	Clearance	--	--	--	TR	--
SLR2-00512	11/12/2004	UPL Yard (P2)	Perimeter Air	1311	--	<0.0038	--	--
SLR2-00513	11/12/2004	UPL Yard	Field Blank	0	--	--	--	<91
SLR2-00514	11/17/2004	UPL Yard	Clearance	--	--	--	TR	--
SLR2-00515	11/19/2004	UPL Yard (P2)	Perimeter Air	1180	--	<0.0042	--	--
SLR2-00516	11/19/2004	UPL Yard	Field Blank	0	--	--	--	<91
SLR2-00517	11/23/2004	UPL Yard (P1)	Perimeter Air	1371	--	<0.0043	--	--
SLR2-00518	11/23/2004	UPL Yard	Field Blank	0	--	--	--	<91
SLR2-00519	12/2/2004	UPL Yard	Clearance	--	--	--	ND	--
SLR2-00520	12/2/2004	UPL Yard	Clearance	--	--	--	TR	--
SLR2-00521	12/3/2004	UPL Yard (P1)	Perimeter Air	1142	--	<0.0031	--	--
SLR2-00522	12/3/2004	UPL Yard	Field Blank	0	--	--	--	<91
SLR2-00523	12/7/2004	UPL Yard	Clearance	--	--	--	TR	--
SLR2-00524	12/21/2004	UPL Yard	Clearance	--	--	--	ND	--
SLR2-00525	12/21/2004	UPL Yard	Clearance	--	--	--	TR	--
SLR2-00526	1/13/2005	UPL Yard	Clearance	--	--	--	TR	--
SLR2-00527	1/13/2005	UPL Yard	Clearance	--	--	--	TR	--
SLR2-00528	1/13/2005	UPL Yard	Clearance	--	--	--	TR	--
SLR2-00529	1/31/2005	UPL Yard	Clearance	--	--	--	TR	--
SLR2-00530	1/31/2005	UPL Yard	Clearance	--	--	--	TR	--
SLR2-00531	1/31/2005	UPL Yard	Clearance	--	--	--	ND	--
SLR2-00532	3/8/2005	UPL Yard	Clearance	--	--	--	TR	--
SLR2-00533	3/8/2005	UPL Yard	Clearance	--	--	--	ND	--

Notes:

Void Samples

%	- percent
<	- Indicates below detection limit
AHERA	- Asbestos Hazard and Emergency Response Act
EXC	- excursion
f/cc	- fibers per cubic centimeter
LA	- Libby amphibole
NA	- not applicable
ND	- Non-detect
Not Analyzed	- sample was archived without analysis
OVRLD	- sample filter was overloaded
P*	- R&R Environmental Perimeter Sample Location
PCM	- phase contrast microscopy
PLM	- polarized light microscopy
s/cm ²	- structure(s) per square centimeter
s/L	- structure(s) per liter
TEM	- transmission electron microscopy
TR	- trace (<0.2% LA asbestos below 12 inches)
TWA	- time weighted average
VE	- visual estimation



Legend

- 5-Point Composite Sample Area
- R&R Air Sample Location
- Former Railroad Spur
- Site Boundary
- Concrete Slab
- Site Features
- Barrier Applied (No Confirmation Samples Collected)

ND - Nondetect
TR - <0.2% Libby Amphibole Asbestos by PLM 9002

Appendix 5

Cost of Clean-up of the 3rd West Substation as of 8/29/05

Backhoe Excavation			
Invoice #	Description	Amount	Status
4536	Initial 1500 yds excavation + set-up @ \$161.49(.75)/yd	\$181,676.25	Paid
5048	1500 yds backfill @ \$161.49(.25)/yd(1.49 Trans inc.)	\$90,240.00	Paid
4536	817 yds excavated @ \$134.50(.75)/yd	\$82,414.88	Paid
5048	817 yds backfill @ \$134.50(.25)/yd(1.49 Trans inc.)	\$40,931.70	Paid
4574	1547 yds excavated @ \$134.50(.75)/yd	\$156,053.63	Paid
	1196.52 yds backfill @ \$134.50(.25)/yd(1.49 Trans inc.)	\$59,945.65	Paid
5093	350.48 yds backfill @ \$134.50(.25)/yd(1.49 Trans inc.)	\$17,562.55	Paid
4610	3244 yds excavated @ \$139.50(.75)/yd	\$339,403.50	Paid
5093	3244 yds backfill @ \$139.50(.25)/yd(1.49 Trans inc.)	\$168,590.68	Paid
4640	2482 yds excavated @ \$139.50(.75)/yd	\$259,679.25	Paid
5093	340.06 yds backfill @ \$139.50(.25)/yd(1.49 Trans inc.)	\$19,232.02	Paid
	1142.79 yds backfill @ \$139.50(.25)/yd(1.49 Trans inc.)	\$59,390.80	Paid
5176	999.15 yds backfill @ \$139.50(.25)/yd(1.49 Trans inc.)	\$51,925.83	Paid
4656	3740 yds excavated @ \$139.50(.75)/yd	\$391,297.50	Paid
5176	569.06 yds backfill @ \$139.50(.25)/yd(1.49 Trans inc.)	\$29,574.05	Paid
4708	2006 yds excavated @ \$139.50(.75)/yd	\$209,877.75	Paid
5000	68 yds excavated @ \$139.50(.75)/yd	\$7,114.50	Paid
5030	68 yds excavated @ \$139.50(.75)/yd	\$7,114.50	Paid
	16304 yds total removed	\$2,172,025.04	
5048	Stabilizing Rock	\$31,407.96	Paid
5093	Stabilizing Rock	\$7,069.92	Paid
	Downtime equipment rental charges	\$7,975.00	Paid
5093	Downtime equipment rental charges	\$1,046.50	Paid
Total for backhoe excavation			\$2,219,524.42
Air Mover Excavation			
Invoice #	Description	Amount	Status
4536	Area north of north transformer	\$2,923.76	Paid
4574	Area north of north transformer	\$27,246.82	Paid
4610	UTA Substation area	\$16,709.64	Paid
4640	UTA Substation area and east of control house	\$23,509.71	Paid
4656	Area east of control house	\$20,015.02	Paid
4708	Area east of control house	\$32,373.47	Paid
5000	Area west of control house	\$35,971.89	Paid
5030	Area west of control house	\$69,825.02	Paid
5048	Area west of control house	\$75,393.90	Paid
5093	Area west of control house	\$39,281.06	Paid
5114	Area west of control house	\$9,221.63	Paid

5093	Backfill energized areas	\$6,000.00	Paid
5114	Backfill energized areas	\$18,076.58	Paid
5176	Backfill energized areas	\$42,620.91	Paid
Total for air mover excavation			\$419,169.41
5305	Retaining Wall Construction	\$16,814.76	Paid
5305	Fence Reconstruction	\$10,907.75	Paid
Total Additional Construction			\$27,722.51
Total Excavation			\$2,666,416.34

Additional costs			
Invoice #	Description	Amount	Status
Internal and Reports			
224522-001	PERCo (Site history)	\$22,305.64	Paid
224522-0501	PERCo (Site history and consulting)	\$5,388.63	Paid
224522-0502	PERCo (Site history and consulting)	\$1,453.50	Paid
	Misc. Expenses (DNW travel, electrical safety watch, etc.)	\$182,989.85	Paid
	Substation rebuild (locates, regrounding, etc)	\$33,426.55	Paid
Total Internal and Reports			\$245,564.17
R&R Industrial Hygiene Consultant			
2056	March '04 Work Plan prep	\$5,837.82	Paid
2100	May '04 Work Plan & Sampling Plan prep	\$4,401.76	Paid
2135	June '04 Work Plan & Sampling Plan prep	\$3,775.00	Paid
2162	July '04 plan prep and site sampling	\$3,210.00	Paid
2173	August '04 site documentation & sampling	\$19,309.31	Paid
2190	Sept '04 site doc, sampling, & sample analysis	\$29,979.25	Paid
2205	Oct '04 site doc, sampling, & sample analysis	\$41,764.25	Paid
2222	Nov '04 site doc, sampling, & sample analysis	\$37,064.88	Paid
2241	Dec '04 site doc, sampling, & sample analysis	\$39,169.25	Paid
2260	Jan '05 site doc, sampling, & sample analysis	\$36,494.63	Paid
2276	Feb '05 site doc, sampling, & sample analysis	\$32,548.63	Paid
2299	Mar '05 site doc, sampling, & sample analysis	\$15,804.33	Paid
2330	Apr '05 site doc, sampling, & sample analysis	\$7,663.01	Paid
2344	Apr '05 site documentation	\$12,879.38	Paid
Total R&R			\$289,901.50
Thermal West (Asbestos Abatement Contractor)			
9577	Control House Cleaning	\$22,000.00	Paid
10312	Removal of negative air machine	\$146.23	Paid
Total Thermal West			\$22,146.23
Misc. Rentals, etc.			
103195411	GE Capital (Office trailer rental, July-Aug)	\$258.98	Paid
103222703	GE Capital (Office trailer rental, Aug-Sept)	\$258.98	Paid

103257814	GE Capital (Office trailer rental, Sept-Oct)	\$258.98	Paid
103285795	GE Capital (Office trailer rental, Oct-Nov)	\$258.98	Paid
103313840	GE Capital (Office trailer rental, Nov-Dec)	\$258.98	Paid
103346574	GE Capital (Office trailer rental, Dec-Jan)	\$258.98	Paid
103373226	GE Capital (Office trailer rental, Jan-Feb)	\$258.98	Paid
103402771	GE Capital (Office trailer rental, Feb-Mar)	\$258.98	Paid
103436433	GE Capital (Office trailer rental, Mar-Apr)	\$258.98	Paid
103442854	GE Capital (Office trailer removal)	\$538.98	Paid
Total GE Capital			\$2,869.80

Invoice #	Description	Amount	Status
70490	AMPCO Parking (Parking lot rental, Sept)	\$2,135.00	Paid
70551	AMPCO Parking (Parking lot rental, Oct)	\$2,135.00	Paid
70679	AMPCO Parking (Parking lot rental, Nov)	\$2,135.00	Paid
70866	AMPCO Parking (Parking lot rental, Dec)	\$2,135.00	Paid
71012	AMPCO Parking (Parking lot rental, Jan)	\$2,135.00	Paid
71116	AMPCO Parking (Parking lot rental, Feb)	\$2,135.00	Paid
71217	AMPCO Parking (Parking lot rental, Mar)	\$2,135.00	Paid
71345	AMPCO Parking (Parking lot rental, Apr)	\$1,382.50	Paid
71609	AMPCO Parking (Parking lot rental, May)	\$630.00	Paid
Total AMPCO			\$16,957.50

IC8724	Work Care (Medical Imaging)	\$614.00	Paid
583228	Work Care (Employee chest x-ray & asbestos review)	\$302.00	Paid
584446	Work Care (Employee chest x-ray & asbestos review)	\$218.00	Paid
585774	Work Care (Employee chest x-ray & asbestos review)	\$501.00	Paid
586186	Work Care (Employee chest x-ray & asbestos review)	\$151.00	Paid
Total Work Care			\$1,786.00

Total Additional Costs	\$579,225.20
Total Excavation Costs	\$2,666,416.34
Total Invoiced and Paid	\$3,245,641.54